

II. Listing of Claims

Below is the entire set of pending claims pursuant to 37 C.F.R. §1.121(c)(3)(i). No changes have been made:

1. ~~(Cancelled) Process to preserve natural flowers, characterized by the following steps:~~
 - ~~——— a) Selecting and cutting (1) the flowers, immersing the stems in water, and then separating the each flower from its stem;~~
 - ~~——— b) Assembling the supporting devices and grids (2), comprising of placing flowers in the grids (7), assembling the grids on the central axle (9) of the supporting device (8), one on top of the previous leaving enough distance in between to prevent the flowers from crushing, such distance will be dependant on the height required for each type of flower to be processed;~~
 - ~~——— c) A First dehydrating step (3a), wherein the supporting device (8) once completely filled with flowers, is placed into a reactor (14), filling the reactor with a mixture (16), passed from a feeder tank, of any solvent miscible in water and water with solvent contents no less than 70% until the flowers are completely immersed in the solvent, maintaining it at a temperature between around room temperature, and 100°C, during at least 30 min., then extracting the solvent from the reactor (14);~~
 - ~~——— d) A second dehydration (3b) step, wherein a mixture of any solvent miscible in water with alcohol contents no less than 80% at a temperature between room and 100°C, is poured into reactor (14) until solvent has completely covered the flowers during at least 30 min, then the solvent is extracted from reactor (14);~~
 - ~~——— e) A third dehydration (3c) step, wherein a mixture of any solvent miscible in water with alcohol contents no less than 90% at a temperature between around room and 100°C, is poured into the reactor (14) until said solvent has completely covered the flowers during at least 30 min, then the solvent is extracted from reactor (14);~~
 - ~~——— f) Optionally, the third dehydration (3c) step can be repeated progressively increasing the~~

~~solvent content in the mixture;~~

~~———g) An infiltration step (4) wherein flowers are immersed into a bath comprising a blend of colorants, a solvent of the same characteristics as those used in the dehydration steps, a polymer soluble in said colorants and solvent, and optionally, other substances aiding to give the desired color;~~

~~———h) An evaporation (5) step, wherein the mixture of the former step is drawn out and the solvent is evaporated under vacuum or applying temperature.~~

2. (Cancelled) The process of claim 1, wherein in the step a) the selected flowers are in the desired opening point for obtaining the final product.

3. (Cancelled) The process of claim 1, wherein in step a) the stems of the flowers are immersed into water during around 6 to around 72 h.

4. (Cancelled) The process of claim 1, wherein in step a) the stems of the flowers are cut at a distance between 1 cm and 2 cm for medium size flowers, and between 10 cm to 15 cm for large size flowers.

5. (Cancelled) The process of claim 1, wherein in the step b) the flowers are stuck in sharp tips (12) of the spirals (11) of the grids (12) until completing its total capacity.

6. (Cancelled) The process of claim 5, wherein the flowers are stuck in said sharp tips (12) of the spirals (11) of the grids (12) until completing its total capacity.

7. (Cancelled) The process of claim 1 wherein in the step b) tubular separators (13) are placed between the grids (7).

8. (Cancelled) ~~The process of claim 1 wherein in the step c) the solvent temperature is around 80.degree. C.~~
9. (Cancelled) ~~The process of claim 1 wherein in the step d) the solvent temperature is around 65.degree. C.~~
10. (Cancelled) ~~The process of claim 1 wherein in the step e) the solvent temperature is around 65.degree. C.~~
11. (Cancelled) ~~The process of claim 1 wherein in the step f) the solvent temperature is around 65.degree. C.~~
12. (Cancelled) ~~The process of claim 1, where in steps c), d), e) and f) the water miscible solvent is an alcohol.~~
13. (Cancelled) ~~The process of claim 1, wherein said alcohol is ethanol.~~
14. (Cancelled) ~~Process of claim 1, wherein in step g) the used mixture has a percentage of polymers between 20 and 55% and a percentage of solvent between 45 and 80%.~~
15. (Cancelled) ~~The process of any of claims 1 or 14, wherein in step g) the polymer is polyethylene glycol.~~
16. (Cancelled) ~~The process of claim 15, wherein the molecular weight of said polyethylene glycol is 400.~~

17. (Cancelled) ~~The process of claim 1, wherein in step c) the passage of mixture (16) of ethanol and water from said feeder tank (15) is carried out by introducing pressurized air into the feeder tank (15) and opening the valves that communicate said tank with said reactor (14).~~

18. (Cancelled) ~~The process of claim 1 wherein in steps c), d), e) and f), after the solvent extraction, the solvent is recovered by traditional methods, such as distillation.~~

19. (Cancelled) ~~The process of claim 1, wherein in steps c), d), e), and f), the time of residence of the flowers in the mixture will vary according to temperature, and temperature is dependent on the characteristics of the flowers to be processed, which may vary between room temperature and 100 °C.~~

20. (Cancelled) ~~The process of claim 1, wherein step g) may last from 12 to 72 h at room temperature.~~

21. (Cancelled) ~~The process of claim 1 wherein step g) may last from 2 to 12 h when operating at a temperature up to 100°C.~~

22. (Cancelled) ~~The process of claim 1, wherein stainless steel cylindrical reactors (14) are used under pressures up to 138 kPa, or under vacuum up to 77 kPa and temperatures up to 200°C.~~

23. (Cancelled) ~~The process of claim 1, where the supporting device (8) is made up by circular grids (7), the base of which is formed by channels (10), allowing drainage of fluids outside the grids (7), on such metal channels (10) frustoconical stainless steel spirals (11) have~~

been welded in which the bottom base wire has been perpendicularly bent and ends in a sharpen tip (12) wherein the flower stem is stuck.

24. (Cancelled) ~~The process of claim 23, wherein said grids (7) are assembled on the central axle (9) of the supporting device (8), one on top of the previous, with tubular separators (13) in between, at a distance enough to avoid crushing the flowers and which size is dependant on the height required for each type of flower to be processed.~~

25. (New) A method for preserving flowers, the method comprising:

preparing the flowers for preservation, the preparing the flowers for preservation comprising:

selecting the flowers;

cutting the flowers;

immersing stems of the flowers in water;

separating each of the stems from a remaining portion of each of the flowers, the remaining portions of each of the flowers comprising the non-stem portion of the flowers;

assembling a supporting device, the supporting device comprising at least one grid, the assembling the supporting device comprising:

placing each of the flowers in an opening of the at least one grid;

assembling the at least one grid on a central axle of the supporting device, wherein the at least one grid is placed at a distance along the central axle from an adjacent grid, the distance sufficient to prevent the flowers from being crushed by an adjacent grid and dependent on a height of the flowers;

implementing a first dehydrating step, the first dehydrating step comprising:

filling the supporting device with flowers;

placing the supporting device into a reactor;

filling the reactor with a first mixture until the flowers are substantially immersed in the first mixture, the first mixture comprising a first water-miscible solvent and water, wherein the first water-miscible solvent comprises more than 70% of the first mixture;

maintaining the first mixture at a temperature between approximately room temperature and 100°C for the time period, the time period comprising approximately at least thirty minutes;

extracting the first mixture from the reactor;

implementing a second dehydrating step, the second dehydrating step comprising:

filling the reactor with a second mixture until the flowers are substantially immersed in the second mixture, the second mixture comprising a second water-miscible solvent and water, wherein the second water-miscible solvent comprises more than 80% of the third mixture;

maintaining the second mixture at a temperature between approximately room temperature and 100°C for the time period;

extracting the second mixture from the reactor;

implementing a third dehydrating step, the third dehydrating step comprising:

filling the reactor with a third mixture until the flowers are substantially immersed in the third mixture, the third mixture comprising a third water-miscible solvent and water, wherein the third water-miscible solvent comprises more than 70% of the third mixture;

maintaining the third mixture at a temperature between approximately room temperature and 100°C for the time period;

extracting the third mixture from the reactor;

optionally repeating the third dehydration step progressively increasing the water-miscible solvent content in a the mixture;

implementing an infiltration step, the infiltration step comprising:

immersing the flowers in a bath mixture comprising a blend of colorants; a fourth mixture substantially similar to one of the first, second, or third mixtures; a polymer soluble in the colorants and fourth solvent; and, optionally, other substances aiding to give the flowers a desired color;

implementing an evaporation step, the evaporation step comprising the bath mixture being substantially removed from the flowers and the fourth mixture being substantially evaporated in a vacuum or by applying an evaporating temperature.

26. (New) The method of claim 25, wherein in the flowers are substantially at a desired opening point for obtaining a final open flowers product.

27. (New) The method of claim 25, wherein the stems of the flowers are immersed into water for a period between approximately six to approximately 72 hours.

28. (New) The method of claim 25, wherein in the stems of the flowers are cut at a distance from the non-stem portion, the distance between 1 centimeter and 2 centimeters for medium size flowers, and between 10 centimeters to 15 centimeters for large size flowers.

29. (New) The method of claim 25, wherein in the flowers are placed in sharp tips of spirals of the grids.

30. (New) The method of claim 29, wherein the grids are substantially full of flowers.

31. (New) The method of claim 25, wherein in tubular separators are placed between the grids.

32. (New) The method of claim 25, wherein in the first mixture temperature is approximately 80°C.
33. (New) The method of claim 25, wherein in the second mixture temperature is approximately 65°C.
34. (New) The method of claim 25, wherein in the third mixture temperature is approximately 65°C.
35. (New) The method of claim 25, wherein in the fourth mixture temperature is approximately 65°C.
35. (New) The method of claim 25, where in the water-miscible solvents of the first, second, third, and fourth mixtures comprise an alcohol.
36. (New) The method of claim 35, wherein the alcohol is ethanol.
37. (New) The method of claim 25, wherein the bath mixture comprises between 20% and 55% polymers and between 45% and 80% fourth mixture.
38. (New) The method of claim 25 or 37, wherein in the polymer is polyethylene glycol.
39. (New) The method of claim 38, wherein a molecular weight of the polyethylene glycol is 400.

40. (New) The method of claim 25, wherein the filling the reactor tank with the first mixture comprises:

passing the first mixture from a feeder tank to the reactor tank by introducing pressurized air into the feeder tank, and opening valves between the feeder tank and the reactor.

41. (New) The method of claim 25, further comprising:

after extracting the first, second, third and fourth mixtures, recovering the mixtures using traditional methods, the traditional methods including distillation.

42. (New) The method of claim 25, wherein in the time period varies between room temperature and 100 °C according to the first, second, third, and fourth mixture temperatures, characteristics of the flowers.

43. (New) The method of claim 25, wherein the infiltration step lasts for a period between 12 and 24 hours and wherein the bath mixture is at room temperature.

44. (New) The method of claim 25, wherein the infiltration step lasts for a period between 2 to 12 hours and wherein the bath mixture is at a room temperature of up to 100°C.

45. (New) The method of claim 25, wherein stainless steel cylindrical reactors are used under pressures up to 138 kPa, or under vacuum up to 77 kPa and temperatures up to 200°C.

46. (New) The method of claim 25, where the grids of the supporting device comprise circular grids comprising a base, the base formed by metal channels allowing drainage of fluids from the grids, and wherein the metal channels comprise frustoconical stainless steel spirals having been welded wherein a bottom base wire is perpendicularly bent and ends in a

sharpened tip wherein the flower stem is stuck.

47. (New) The method of claim 46, wherein the grids are assembled on a central axle of the supporting device, wherein at least one grid is on top of an adjacent grid, and wherein the tubular separators are a size sufficient to prevent the flowers from being crushed by an adjacent grid and dependent on a height of the flowers, the size dependent on the height of the flowers.